

## **DISK DRIVE ANCHORING MECHANISM**

### **FIELD OF THE INVENTION**

The invention relates to an anchoring mechanism adopted for use on a computer  
5 casing and particularly to a disk drive anchoring mechanism for installing or removing  
disk drives without using screw drives.

### **BACKGROUND OF THE INVENTION**

The hardware equipment of computer systems mostly include a main board, various  
10 interface cards, a floppy disk drive, hard disk drive and an optical disk drive that are  
housed in a machine casing, which is generally called a computer casing. The computer  
casing usually has a housing compartment and a lid to seal the housing compartment. As  
the floppy disk drive, hard disk drive and optical disk drive are optional devices, to  
facilitate installation and future expansion, machine racks for the floppy disk drive, hard  
15 disk drive and optical disk drive generally are pre-configured in the computer casing.  
Through these machine racks users can remove or add equipment such as the floppy  
disk drive, hard disk drives and optical disk drive.

At present, screws are required for fastening disk drives. First, the disk drive is  
mounted onto the assembled machine rack, then the disk drive is fastened to the  
20 machine rack through screws. Such a fastening approach has many drawbacks. Notably  
while assembling the disk drive, workers at the production line have to use screw drives  
constantly to do fastening operations. The production process is complicated and tedious.  
It hampers production efficiency.

In view of the aforesaid disadvantages, to develop a disk drive anchoring mechanism  
25 to speed up installation and removal of disk drive without using screw drives to save

time is essential.

## **SUMMARY OF THE INVENTION**

Therefore the primary object of the invention is to provide a disk drive anchoring  
5 mechanism for installing or removing disk drives without using screw drives.

The disk drive anchoring mechanism of the invention is adopted for use on a  
computer casing. It includes fastening elements, a bracing board, latch flanges and a  
drawing rack. The fastening elements are screws engaging with screw holes formed on  
two opposite sides of a disk drive. The bracing board is fixedly mounted on the  
10 computer casing for holding the disk drive. The latch flanges are located on the bracing  
board corresponding to the two opposite sides of the disk drive and sandwich the disk  
drive therebetween through the fastening elements. The latch flanges have a guiding  
section. The drawing rack has a guiding slot corresponding to the guiding section to  
enable the drawing rack to move along the guiding section. Thereby the drawing rack  
15 may be moveably coupled with the latch flanges, to confine the fastening elements and  
anchor the disk drive.

The foregoing, as well as additional objects, features and advantages of the invention  
will be more readily apparent from the following detailed description, which proceeds  
with reference to the accompanying drawings.

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## **BRIEF DESCRIPTION OF THE DRAWINGS**

FIG. 1 is a perspective view of the invention.

FIG. 2 is an exploded view of the invention.

FIG. 3 is a schematic view of the invention showing the bracing board mounted on a

computer casing.

FIG. 4 is a schematic view of the invention showing a disk drive sandwiched between two latch flanges.

FIGS. 5A, 5B and 5C are schematic views of the invention showing the disk drive, sandwiched between two latch flanges, with the fastening elements unconfined by the drawing rack.

FIGS. 6A and 6B are schematic views of the invention showing the disk drive, sandwiched between two latch flanges, with the fastening elements confined by the drawing rack.

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#### **DESCRIPTION OF THE PREFERRED EMBODIMENT**

Referring to FIGS. 1 through 6B, the disk drive anchoring mechanism of the invention is adopted for use on a computer casing 20. It includes fastening elements 11, a bracing board 12, latch flanges 13a and 13b, and a drawing rack 14.

15 The fastening elements 11 are screws and fastened to screw holes 31 formed on two opposite sides of a disk drive 30 (as shown in FIG. 4).

The bracing board 12 is fixedly mounted on the computer casing 20 for holding the disk drive 30 (referring to FIG. 3).

20 The latch flanges 13a and 13b are located on the bracing board 12 corresponding to the two opposite sides of the disk drive 30 to sandwich the disk drive 30 therebetween through the fastening elements 11 (referring to FIG. 5A). The first latch flange 13a has a guiding section 131, the second latch flange 13b has a housing section 132. The guiding section 131 and housing section 132 enable the drawing rack 14 to moveably couple with the latch flanges 13a and 13b.

The drawing rack 14 is moveably coupled with the latch flanges 13a and 13b to confine the fastening elements 11 to anchor the disk drive 30. The drawing rack 14 has a guiding slot 141 corresponding to the guiding section 131 such that the guiding slot 141 may be moved along the guiding section 131 to enable the drawing rack 14 to be 5 movably coupled with the first latch flange 13a. The housing section 132 enables the drawing rack 14 to be movably coupled with the second latch flange 13b.

The first latch flange 13a has an anchor slot 133, and the drawing rack 14 has an indented trough 142, corresponding to the anchor slot 133 and a channel slot 143. The fastening element 11 may be slid into the bottom end of the anchor slot 133 and the 10 channel slot 143 through the anchor slot 133 and the indented trough 142. As a result, that the drawing rack 14 may be moved along the channel slot 143 over the fastening element 11 to confine the fastening element 11 at the bottom end of the anchor slot 133, to anchor the disk drive 30.

The second latch flange 13b also has an anchor slot 133, and the drawing rack 14 has 15 an open slot 144 corresponding to the anchor slot 133 and a channel slot 143 connecting to the bottom end of the open slot 144. The fastening element 11 may be slid into the bottom end of the open slot 144 and the channel slot 143 through the anchor slot 133 and the open slot 144. The drawing rack 14 may be moved along the channel slot 143 over the fastening element 11 to confine the fastening element 11 at the bottom end of 20 the anchor slot 133, to anchor the disk drive 30.

Referring to FIGS. 4 through 6B, when in use, mount the disk drive 30 between the latch flanges 13a and 13b, with the fastening element 11 close to the first latch flange 13a sliding through the anchor slot 133 and indented trough 142 into the bottom end of the anchor slot 133 and the channel slot 143. The fastening element 11, close to the 25 second latch flange 13b, has to slide through the anchor slot 133 and open slot 144 into the bottom ends of the anchor slot 133 and the open slot 144 and the channel slot 143.

The disk drive 30 may be anchored between the latch flanges 13a and 13b through the fastening elements 11.

Moving the drawing rack 14 may be moved along the channel slot 143 over the fastening element 11, and through the anchor slot 133 and channel slot 143, the 5 fastening element 11 may be confined to the bottom end of the anchor slot 133 to anchor the disk drive 30.

Thus by merely pushing the drawing rack 14, the disk drive 30 may be anchored rapidly with hands without using screw drives. That saves time.

While the preferred embodiment of the invention has been set forth for the purpose of 10 disclosure, modifications of the disclosed embodiment of the invention as well as other embodiments thereof may occur to those skilled in the art. Accordingly, the appended claims are intended to cover all embodiments, which do not depart from the spirit and scope of the invention.